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The Female Athlete Triad: What You Don't Know Can Hurt You

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Objective: The purpose of this study was to investigate female student-athletes' knowledge of the female athlete triad and their comfort level reporting a suspected eating disorder of a teammate or themselves to their team's Certified Athletic Trainer. The female athlete triad can be defined as a combination of low energy availability, menstrual dysfunction, and low bone mineral density.

Design and Setting: Survey research at a Midwestern Division III College. The independent variables of this study were; the sport that the female student-athlete plays and their college grade level. The dependent variables of this study were; the student-athletes' knowledge of the female athlete triad and their comfort level reporting a suspected eating disorder to their Certified Athletic Trainer.

Participants: A convenience sample of N=117 was used. The final return rate was 87% (n=102). 12% (n=12) were on the lacrosse team, 17% (n=17) were on the swim team, 10% (n=10) were on the softball team, 17% (n=17) were on the basketball team, 15% (n=15) were on the volleyball team, 9% (n=9) were on the cross country team,

answer options were 'True' or 'False', with 'True' equating two, and 'False' equating one.

Results: The data shows a lack of knowledge in the subjects about certain aspects of the female athlete triad. Only 22% (n=23) of those surveyed could identify the three components of the triad, only 34% (n=35) knew that it was not normal to miss periods during the competitive season, and only 32% (n=33) understood that loss of bone mineral density can be irreversible. There was a statistically significant difference ($H=12.613$, $df=5$, $p=.027$) in female student-athletes' knowledge of the normalcy of missing menstrual cycles between sport, with basketball and soccer have the highest percentage answer correctly, and softball having the lowest percentage answer correctly. There was also a statistically significant difference ($\chi^2=6.811$, $df=1$, $p=.009$) in the number of the female student-athletes' comfort level in reporting menstrual dysfunction to Certified Athletic Trainers depending on whether the ATC was male or female, with female student-athletes being more

19% (n=19) were on the soccer team. 19% (n=19) of the surveyed population were seniors, 19% (n=19) were juniors, 15% (n=15) were sophomores, 45% (n=46) were freshman. 63% (n=64) had a male ATC, 33% (n=34) had a female ATC, and 4% (n=4) did not identify the gender of their team's ATC.

Intervention: The survey contained a total of seventeen questions. A panel of experts determined face validity and content validity was established using the table of specifications. The research was approved by the IRB. SPSS 21.0 was used to analyze all data. Chi-Squared tests, with a grouping variable of gender of ATC, and Kruskal-Wallis tests, with a grouping variable of sport, tests was used with an alpha level set at .05 *a priori*. Descriptive statistics (frequency counts and percentages) were also used on all applicable data.

Main Outcome Measurement: The answer options for the survey questions were 'True', 'False', or 'Unsure' for ten of the seventeen questions, with 'True' equating three, 'False' equating two, and 'Unsure' equating one. For three of the seventeen questions the comfortable reporting menstrual dysfunction to female rather than male ATCs. It was also found that 55% (n=56) of those surveyed said they would feel comfortable reporting a clinical eating disorder of themselves to their ATC, and 69% (n=70) said they would feel comfortable reporting an eating disorder of a teammate to their ATC. Meaning that 45% (n=46) of those surveyed would not feel comfortable reporting an eating disorder in themselves to their ATC.

Conclusions: This study shows a lack of knowledge of the female athlete triad and some discomfort in reporting eating disorders in the female student-athletes surveyed. Certified Athletic Trainers should develop educational programs to be put into place at the beginning of each sports season with the purpose of preventing the female athlete triad through education, while also emphasizing the confidentiality of anything they report to the ATC and encourage a trusting relationship between the student-athlete and the Certified Athletic Trainers.

Key Words: *female athlete triad, knowledge, female athlete, division III*